

Spring 1866.

* 4633 Among shaded rocks, creeping Petaluma 11/4

4634 Dry hillsides Mendocino Co 12/4

4635 Carex. Borders of violets Petaluma 11/4

* 4636 Dry hillsides Ukiah Mendocino Co

* 4637 Dry woods in gravelly soil 14 $\frac{1}{4}$ Ukiah.

* 4638 Carex. Mill-Creek Ukiah 15/4

" 4639 " Gravelly soil in open woods Ukiah

" " Banks of Mill-Creek, common,
the large leaved form I could find nowhere
at this season save one or two specimens

4641 Swampy places Ukiah

* 4642 Open-woodlands U.S.

4643 Open-woodlands "

* 4644 Sanicula tuberosa Ukiah

Open woodland in gravelly soil. A
common species in such localities in the foot-
hills of the adjoining Sacramento Valley

4645 In wet places Ukiah 14/4

4646 Juncus, moist fields Ukiah 18/4

* 4647 Shaded woods Ukiah

* 4648 Agrostis Big hills U.S.

* 4649 Open woods U.S.

4650 Juncus. Divide of Albion and Russian
Rivers.

* 4651 Open woods on gravelly soil 18 $\frac{1}{4}$ b6.

* 4652. On moist mossy rocks in Mill-Creek Ukiah - Leaves fleshy when fresh.

* 4653. Dry hillsides Ukiah 14/4 66 (scattered)

* 4654. Moist meadows hillsides near Ukiah

* 4655. Meadows Ukiah

4656. Swamps (found the same in the higher Sierras) near Ukiah (but always much dispersed)

4657. Moist banks Ukiah

4658. Callitricha, wet places Utk.

4659. Dry hillsides Ukiah 18/4

4660. Dry hillsides " "

* 4661. Whipple's modesta borders of Redwoods

* 4662. In dry roads near Ukiah

* 4663. Near Ukiah 18/4

* 4664. Wet meadows Ukiah

4665. Among grain Petaluma 18/4

* 4666. In rock meadows Ukiah 18/4

4667. In moist places Ukiah "

* 4668. In dry loose soil Utk. 19/4

* 4669. Dry gravelly soil Russian River Valley

4670. Viola, Shady creek-banks Sherwood Valley Mendocino Co.

4671. Achlys triphylla common in the northern Redwoods.

4672. Little Lake-Valley near ditches.

* 4673. Dry hillsides Russian R. Valley

* 4674. Very common along creeks in Long Valley

* 4675. Shady hillsides Long Valley Mendocino Co.

4676 Shady hillsides Long Valley.

4677 Wet places, dispersed, (odoriferous like *Viola odorata*) Long Valley (purple)

4678 Dry hillsides Russian R. Valley

4679 Dry hillsides " " " "
A very common species in the foothills adjoining east & west Sacramento Valley
It grows generally in large patches.

4680 Rocks in Round Valley. 29/5

4681 Hillsides Long Valley

* 4682 ⁱⁿ Open Woods (cream-colored) Long Valley.

4683 Open Woods (hills) Long Valley.

4684 Gravelly little flats Long Valley.

4685 Damp woods Long Valley.

4686 Damp Woods and banks Long Valley

4687 Damp Creek-banks Long Valley.

4689 Carex. Swamps at Cahto Long Valley
used for hay. ^{Plumosa} le

4690 Moist flats Long Valley.

4691. ^{Fimbr.} Moist flats, Long Valley

4692 Stipa, Eel River Round Valley

4693 Dry hillsides Round Valley.

4694. Dry hillsides R. Valley.

4695 Dry hill sides " " "

4696. Wooded hillsides Long Valley
the finest species met with yet, flowers of a very delicate pink-color - large and showy

4697 Carex. Long Valley

4698 *Melica Mendozina* City
Round Valley on dry hills

4699 Carex 11/5 *Meadows Mendozina* City

4700 Carex. Swamps Mendozino City

4701. Carex. Swamps Mendozino City

4702 Carex. Swamps " " "

4703 Round Valley, quite common.

4704 Festuca Dry shady hillsides Mendozino

4705 Poa Mendozino plains 11/5

4706 Redwood Mendozino (Sometimes white.)

4707 Flowers large. Open wood. Long Valley
Roots eaten by the Indians

4708 Flowers bright red. Open wood. Long Valley

4709 Redwoods, common.

4710 Swampy places Long Valley

4711. *Salix* Red-willow of the settlers
flexible. Long Valley

4712. Dry hillsides Long Valley - Cakto

4713 *Ceanothus*. Jackson Creek 8-12 feet -
high Jackson Valley Mendozino Co.

4714 *Ceanothus* Coast Range alt. 3000 -

4715 The most general plant of the high hills
on the Coast Range.

4716 *Phleum*. Coast Mendozino

4717 Plains of Mendozino.

4718 Swamps at Noyo Mendozinos.

4719 Viola Redwood at Noyo

4720 *Luzula* Plains at Mendozino City

4721. *Ceanothus* Hillsides Russian R. Valley.

4722. On Sandy fields Noyo

4723. Sandy fields among shrubs Noyo

4724. Redwoods at Long Valley

4725. Noyo and Mendocino Plains.

4726. Noyo " " "

4727. Swamps at Mendocino Co. Coast.

4728. Redwoods high hills Mendocino Co.

4729. Swamps at Long Valley.

4730. Swamps " " "

4731. Shady hillsides Long Valley, common

4732. Dry hillsides, Eel River, Mendocino Co.

4733. Open woods, Eel River.

4734. Open plains at Noyo (leaves thick
and succulent).

4735. Sea shore at Noyo. Leaves

4736. Shaded hillsides 20 $\frac{1}{4}$ Long Valley

4737. Meadows at Eel River Mendocino
Co. also at Cloverdale Sonoma Co.

4738. Plains at Mendocino City

4739. Carex in Sphagnum swamps,
Mendocino City

4740. Carex " " " " " "

4741. " " " " " "

4742. Galium, floating in ditches, Mendocino
City

4743. Galium on the plains around the
ditches.

4744. In cultivated fields Mendocino.
 4745. Carex. *Sphagnum* swamps " "
 4746. " " " " "
 4747. " " Borders of thickets, common
 near Mendocino City. 10/5
 4748. Drosers. Sphag - Swamps Mendocino
 4749. On the plains of Mendocino City
 4750. Mendocino plains. 10/5
 4751. " " "
 4752. " " "
 4753. *Bromus ciliatus* Mendocino Plains
 in thickets.
 4754. Mendocino plains (two specimens only)
 4755. Sandy fields Mendocino
 4756. Common in moist meadows.
 4757. " " "
 4758. *Trisetum vernum*. In shady thickets
 Mendocino City. Russian Gulch.
 4759. Sandy plains Port Bragg. The
 flowers large blue, scarcely above the
 ground. much of the aspect of *Calochilus autumnalis*
 4760. Wet meadows at Mendocino City
 4761. Meadows at Eel River
 4762. *Calamagrostis*. Wet places, Mendocino
 4763. *Fimbristylis* Wet places Mendocino City
 4764. *Panicum dichotomum* Plains " "
 4765. Carex, dry meadows

4766. *Calamagrostis*. In the Sphagnum swamps
on little flats, roots long and creeping. 4-8
inches high.

4767. *Luzula*. Swamps. Mendocino City

4768. Swamps " " " "

4769. Wet meadows " " " "

4770. Swamps " " " "

4771. Carex " " " "

4772. Trailing over large portions of land
of the plains 10/5

4773. Salmon berry, thickets near the coast.
in creek-bottoms.

4774. Thickets Mendocino City

4775. Rocks-bluffs Mendocino " "

4776. Sphagnum swamps 11/5

4777. " " " "

4778. *Trisetum*, thickets, Mendocino City

4779. *Laurus densiflora* 12/5. This is the only
oak growing west of the Redwoods.

4780. Alms' Swamps at Mendocino City

4781. Wet meadows 12/5 " " " "

4782. *Ceanothus* a very large shrub on the
high hills of the coast range.

4783. Beach at Fort Bragg (leaves fleshy)

4784. Plains Mendocino City 8/5

4785. Damp canons Mendocino City 13/5

4786. *Trisetum* Woods 1 " " "

4787 *Calamagrostis* Swamps Albion River
 4789 Plains at Mendocino City.
 4790 Sandy Plains near little river
 4791. Damp Gulches Mendocino City
 4792 " " " "
 4793 Sphag-swamps " " "
 4794. Common on the plains "
 4795 Swamps at Fort Bragg. Common.
 4796 Gravelly soil Anderson Valley 1815
 4797 " " " " "
 4798 " " " " "
 4799 " " " " "
 4800 " " " " "
 4801 *Agrostis* Meadows Anderson V.
 4802. ~~Stipa~~^{wiregrass from Mono Creek Calif} " " "
 4803 Wet meadows Little River/coast
 4804. Meadows Anderson Valley
 4805. Around rocks " " "
 4806 Little River (sometimes a moderate
 sized-tree. Borders of rivers & creeks
 4807 Redwoods Anderson Valley
 4808 Carex, common in wet meadows
 4809 Juncus, Meadows Anderson V.
 Very common forms a large portion of
 the main bulk of hay. Wire-grass.
 4810 Moist meadows Anderson Valley
 4811. Swamps & moist places at Hogo

4812. *Fimbristylis meadowii*, Anderson Valley

4813 Very common in grain fields, Anderson

4814 Common in Redwoods.

4815. On the dry plains near Little River 24/5.

4816 On metamorphic sandstone bluffs
(Big River (at the mouth) Mendocino City
Río Grande on the old maps)

4817 Meadows Anderson V. 24/5

4818 Moist banks Big River

4819 Salmon berry Big River 16/5
fruit very large, but of a rather watery taste.

4820 Canons at Big River-Mendocino City

4821. Dry hills Anderson Valley

4822 *Quercus wislizenii* Anderson Valley

4823 " " " "

4824 " " " "

4825 *Qu. longissima* Anderson Valley

4826 Meadows Anderson V?

4827 Swamps (open) near Albion River

4828. Swamps " " " "

4829 Woods at Cloverdale

4830 Rocks at Big River Mendocino City

4831. Meadows " " "

4832 Grain fields Anderson Valley

4833 Creek-beds Anderson "

4834 Dry Creek Mendocino Co.

4835. *Pu. densiflora* Cloverdale May

June 1866

Sierras.From June 6th to Sept.
1866.

10

4836 *Sporobolus* Sandy fields at the San Joaquin & Merced Rivers.

4837 Carex. Pechees Pass. 1300 alt.

4838 Linaria Wishigen Bear Valley

4839 A low shrub with very slender round-like branches (fastigiate)
Pechees Pass 1200 alt.

4840 Panicum banks of the Merced $\frac{1}{16}$

4841. Banks of Merced.

4842. Agrostis Banks of Merced

4843. Plains near Merced (sand soil)

4844. Oenothera " " " "

4845 " " " "

4846 Dry plains also Bear Valley

4847 banks of the San Joaquin

4848 Mount Bullion 3000 alt.

4849 " " " "

4850 " " " "

4851. In the gravelly bed of the San Benito River Coast Range

4852. Elgmus Mt. Bullion

4853 " " " " 15/16.

4854 " " " "

4855. " " "

4856 " " " "

4857 Ditches and Watercourses Bear Valley

4858 A low shrub with slender branches.

June 1868

11.

4858. Best Valley.
4859. At Clark's and Yosemite Valley^{21/6}
4860. Sandy soil at Clark's
4861. Open woods at Clark's & Yos. Valley
light moist places
Clark's & Yos. Valley.
4862
4863
4864. Pinus near De Long's (4000 alt.)
4865. Stipa. Dry River beds Clark's & Yos.
4866. Pinus. Creek beds Clark's.
4867. Among rocks Clark's. Yo Valley
4868. Clark's & Yo. Valley - sandy soil
4869. " " Branches of oaks
4870. Ceanothus (blue) Big trees.
4871. Kelloggia. Brownish shrubs and trees
in open woods from Clark's and Yo. Valley
4000 - to Mono Pass 10,000-9000
Very common in such localities
Swampy places Yos. Valley.
common Yos. Valley.
Clark's & Yo. V.
Cornus. Clark's Merced River.
Clark's & Yo. V.
Clark's. Yos. Valley.
Rocks Big-trees & Yos. Valley
Big trees. low shrubs.
Big trees low shrubs.
Big trees & Yos. Valley.
Open Woods Big trees. %/c.

June. 1866

12.

4883 Big trees (7000 alt.) 3-4 feet high
blooms white.

4884. Big trees, open woods

4885. Mt. Raymond (8-9000 alt.) small shrub

4886. Big trees, loose soil

4887. Big-trees & Yos. Valley

4888. Wet meadows Yos. Valley

4889. Rocks near Merced River. Clark's

4890. Wet places & River banks. Yos. V?

4891. Fens Yos. Valley

4892. Helenium, banks of Merced Clark's
and also Yos. Valley. Very common.
Asclepias sandy soil, Yos. Valley

4893 " " sandy soil on the San Joaquin
plains, very common $\frac{1}{6}$.

4894. Carex, wet places Yos. Valley

4895 wet places Yos. Valley

4896. Rocky places (shady) Yos. Valley

4897 Mariposa Trail among rocks $\frac{1}{4}$
Yos. Valley.

4898 Mariposa Trail Yos. Valley

4899. *In. chrysanthemum*. Inspiration rocks
Yos. Valley.

4900. *Ceanothus* (white flowers) near Inspiration
rocks - a low flat-topped much spreading
bush, called snow-bush.

4901. flowers blue, loose soil open woods
Trail of Yos Valley 8000 down to 5000

July 1866

13.

4894. Small shrub on the banks of Bridal Veil Creek. common.

4895. *Azania*, same l. also meadows.

4896. Meadows and banks of Bridal Veil creek H. 8000.

4897. Glutinous (viscid) open wood, Yo. Valley

4898. Wet rocks Yo. Valley

4899. Wet rocks " "

4900. Mariposa Trail Yo. Valley

4901. Meadows Inspiration rocks

4902. Carex , " " " Yo. V.

4903. " " " " "

4904. Open wood " " "

4905. Carex " " "

4906. *Luzula* meadow " " "

4907. A little low trailing shrub. Trail. Yo.

4908. Trail Yo. Valley

4909. *Poa* open woods.

4910. Debris piles whitish blossom.
Yo. Valley.

4911. Very small shrub on rocks Debris. Yo.

4912. Debris in the Valley.

4913. *Aca* Debris where water drops on it.
Valley. 5-12 feet high.

4914. Sandy soil Valley.

4915. Trail open wood Yo. Valley.

4916. meadows Inspiration rock.

4917. Sandy soil Valley.

July 1866

14.

4918 Sandy shady soil Yos Valley.
4919 Oenothera Valley.
4920 Sandy soil "
4921. " " " "
4922 " " " "
4923 Debris around the Valley.
4924. Sandy soil Valley.
4925. Open wood. Sandy soil
Debris Valley.
4927 Trail Valley also Big trees.
4930 Sandy soil Valley.
4931. Little shrub. " "
4932. On wet peaty soil, meadows.
4933. Dodecatheon Valley
4934. Trail Valley open woods
loose soil
4935. On rocks in the Valley.
4936. Swampy localities Valley (Trail)
Near the Falls in ^{moist} wet places.
4938 upon rocks Valley
4939 upon rocks 517.
4940 Trail 3/6. Yos. Valley.
4941. Mount Bullion Bear Valley.
4942 " " " upon rocks.
4943 " " " also Yos. Valley
4944. Silene. Mt. Bullion also big trees &
Yos. Valley. common, in large tufts.
4945. Mt. Bullion & Yos. Valley.
Bear Valley

July 1866

15.

4946. *Sentellaria* Mt Bullion 9/6
4947. Mt Bullion very common also in
Yos. Valley. Cowiche well.
4948. Yos. Fall. Valley.
4949. *Fimenes* upper Valley (Yos) 1/7
4950. Common in moist meadows. Yos. Valley
4951. At the junction of the north and south
fork in the Valley.
4952. Meadows in the Valley
4953. Dry sandy fields Yos. eriq. virginum
4954. Wet meadows. Yos.
4955. *Fimenes* Sandy fields Yos.
4956. *Cyperus* meadows Yos. common.
4957. Carex in sloughs Valley.
4958. *Salix* Sloughs Valley. 9/7
4959. Yos. Valley 14/7.
4960. *Sedum* rocks at Vernal Fall.
4961. Carex Westfall's meadow 8000 f.
4962. " " " " "
4963. " Westfall's meadow (wet places)
4964. " " " " "
4965. *Trifolium* " " " " "
4966. " " " " "
4967. " " " " "
4968. Carex " " " " "
4969. " " " " " Hillsides
4970. Along the trail Yos. Valley & Big trees
4971. Westfall's meadow.

July 1877 1860

16

4972. Trail Yos. Valley
4973. Westfall's meadow
4974. " " " "
4975. " " " "
4976. Mt above the Big tree Grove 21/7
4977. Big tree Grove. ^{Eric. incanum}
Cares Big tree Grove.
4979. Big tree Grove sparingly
meadows Big-trees.
4980. Big tree-Grove (Wax plant)
4982. " " " in meadows.
4983. at Clark's
4984. Yos. Valley near Inspiration mtn.
4985. Big tree Grove.
4986. Murred River at Clark's
among the rocks
4987. Clark's sandy ground.
4988. " " " "
4989. Big tree Grove.
4990. Clark's meadow.
4991. Big tree Grove sparingly.
4992. Big tree-Grove upon rocks.
4993. Big " " * Yos. Valley (very
common on loose sandy soil.)
4994. Big-trees 22/7.
4995. Cares big trees meadows
4996. " " " " "
4997. " " "

July 1866
cont.

4998 Meadowes quite shady & moist. Big tree Grove
Carex. Big Creek also Big tree Grove (banks)
5000. *Gilia* ^{Cephaelis} _{lucana} Hill sides (moist) Big Creek - B. Trees
5001. *Linum*. Big tree-Grove lower part.
not uncommon at that alt.
5002 A low shrub 3-4 feet high on the banks
of Big Creek below the Big tree Grove
called there Sweet Bay.
5003. Big Creek. Dry sandy soil
5004. Senecio. Clark's meadow moist ^{28/66}
5005. Clark's meadow (alt. 4000)
5006 Scutellaria Clark's meadow (in patches)
sometimes the flowers are white
5007 Moist meadow Big tree Grove
also Soda Springs 9.700
5008 Big Creek in sandy banks
5009. Clark's & Big tree Grove. Loose soil
5010 Big tree Grove ^{1/8} 66
5011 Carex Big trees, meadow.
5012. Yer. Valley, at Clark's & Big tree-Grove
seen also at an alt. of 8000 feet. quite
common in open woods and sandy banks.
5013 Clark's and Valley. banks of Merced River
among rocks
5014. Clark's Among ^{rocks on the} ~~banks~~ of Merced River
5016 Clark's. Banks of " " "
5015 Clark's in dry fields *Eryng. ringatum*

Aug. 1866

5017 ^{1/8} Ostrand's meadow. Indians use it for food.

5018. ^{1/8} Carex in Ostrand's meadow.

5019. Ostrand's meadows.

5020. Stipa occidentalis Thurb. In dry sandy soil near Ostrand's. Sheep-men say this grass is much liked by sheep and that they fatten more on this than any other quite common. Yosemite Trail 8000

5021. Ostrand's dry places.

5022. " " " around rocks.

5023. Ostrand's meadows. common also higher up to 10,000 -

5024. Parnassia. borders of small creeks Ostrand's and Mono Lake.

5025. Among mosses and grasses. Ostrand's

5026. Glycerois. Ostrand's banks of creeks

5027. Dry soil Ostrand's also Yos. Valley

5028. Upon rocks Ostrand's

5029. meadows Ostrand's.

5030. Clark's among rocks -

5031. Salix Clark's banks of Merced River

5032. Alnus " " " " "

5033. ^{1/8} Helianthus " " " " " "

5034. " " " " " "

5035. Hillsides dry loose soil " Clark's

5036. Foot of Mt Dana. Tuolumne R. Aug 24
9,700 alt.

Aug. 1866

5037. Same locality as 5036.

5038. Stips, on loose disintegrated granite 20/8

5039. Low shrub 1-2 feet. Gos. Trail at Empire
Camp. also at alt. 9700 Soda Springs
common also in Little Gos. Valley.

5040. Moist meadows. Soda Springs 9700

5041. at 11,000 feet near Mt. Dana.

5042. Same locality as 5041. on loose light
disintegrated granite soil.

5043. Loose wet soil. Dana

5044. Soda Spring Tuolumne R.

5045. Moist meadows " " "

5046. Carex " " " " " "

5047. Little Gos. Valley also Gos. Valley

5048. Veronica. Moist meadows Mono
Pass and Mono Trail at 10,000.

5049. Carex Borders of swamps at 10,000

5050. Soda Spring, Tuolumne R.

5051. Solidago. Meadows " " 9700

5052. Sambucus Sierrae at 10,000.

5053. Salix " " " " "

5054. Tuolumne River " " "

5055. Cuscuta. In dry meadows Tuolumne "

5056. Carex Borders of swamps " " "

5057. Meadows Tuolumne " " "

5058. Artemisia meadow " " "

5059. Epilobium Tuolumne " "

5060. *Swamps* Tuolumne River. 9,700

5061. *Eleocharis* " " " " "

5062. *Fimbristylis* " " " " "

5063. *Senecio* ^{dry wood} " " " " "

5064. *Agrostis* meadows " " " " "

5065. " " " " "

5066. *Festuca* Mt Dana 12,000

5067. *Festuca* " " 12,500.

5068. *Poa* " " 12,000

5069. *Carex* ^{varians} " " 11,000

5070. *Agrostis*, ^{varians} ⁱⁿ ^{10,000 feet} Beds of streams near Mt Dana

5071. *Calamagrostis* Mt Dana 12,500
forming large tufts among the rocks,

5072. *Carex* Mt Dana 12,000.

5073. *Poa* " " 12,500.

5074. *Carex*. " " 12,500.

5075. *Luzula* Mt Dana at. 11,000.

5076. *Poa* " " open Woods at. 11,000

5077. *Carex* " " 12,000

5078. *Sisyrinchium* " 10,000

5079. Woods at Soda Springs 9,700

5080. Sooter pools at Mt Dana. 11-12,000.

5081. Mt Dana 12,500

5082. " " " " "

5083. " " " " "

5084. " " " " "

5085. " " " " "

5086 Bare on dry disintegrated Granite hills
5087. Mt Dana.
5088 Bare, Among Sage-brush Mt D. 10,000
5089. East descent of Mono Pass. 9000.
5090 Pools Tuolumne R. 10,000.
5091. Isoetes Pools. " " " "
5092. Pools " " " "
5093. Isoetes Near Mono Trail. Tuolumne R.
5094. Chars. Mono Trail. 10,000. pools.
5095. On Peontorta. Little Yer. Valley
5096. Juncus East side of Mono Trail. 10,000
5097. Mono Trail 10,000
5098 Eriog. spec. alpinum. M. " " " "
5099 ~~Histotrichium minus~~ (lost 901) " " " "
6000 ~~Ostranda's~~ 8000
6001 Luzula Mono Trail. 11,000 common
6002. Moist open woods Ostranda's
also Big tree Grove 8-11,000.
6003 Ostranda's
6004. " " dry soil in open woods
6005. " " dry soil in meadows
6006. Juncus Serratus meadows.
6007. Dry rocky hill-sides (9000) near Merced R.
6008 Open Woods at 9000 Mono Trail
also Sonora Pass same alt. grows in
large tufts.
6009 With the preceding 6008.

6010 Eriz. meadows (moist) at 9000 alt.
 6011. same loc. as 6010.
 6012. Mono Trail. 8000.
 6013. *Fimicus* " " 10,000.
 6014. Poo Among rocks Mono Trail. 10,000.
 6015. Swamps near Nevada Fall.
 6016. Mono Trail 10,000.
 6017. *Luzula* Mt. Dana
 6018 *Artemisia* " " "
 6019. " " "
 6020 *Carex* " " "
 6021. *Senecio* " " "
 6022. *Luzula* damp. places Mt. Dana.
 6023. " " "
 6024. Dry soil near Mount Dana
 also near Mono Lake and all dry moraine
 on the eastern slope of the Sierras
 6025. Sooter east side of Mono Trail
 pretty deep unded water collected by
 Cl. King.
 6026. *Fimicus* Yosemite Valley
 6027. *Fimicus* Big tree Grove.
 6028. " " " " "
 6029. *Fimicus* Borders of Mono Lake
 6030. " " " " "
 6031. " " " " Big tree Grove
 6032. " " " " Big tree Grove

6033 *Juniperus* Jos. Valley
 6034. " " " " "
 6035. " " " " " June July
 6036. " " " " " "
 6037. " " " " " "
 6038. " Big tree Grove moist meadows.
 6039. *Juniperus* Mono Pips Left.
 6040. " " " Mount Dana 12,000
 6041. " " " Alpine meadows. 10,000
 6042. " " " San Francisco.
 6043. " " " " " "
 6044. " . with 6042.
 6045. *Pinus flexilis* Mono Pips
 making its appearance at 10,000 on the
 western side and descending on the
 eastern to 8000.
 6046. *Pinus flexilis* Mono Pips.
 6047. *Pinus ponderosa* var.
 Mount Maymon 8-9000 near
 Big tree Grove.
 6048. *Pinus contorta* Jos. Trail 8000
 6049. *Pinus ponderosa* Big Creek.
 Clarks moist meadows with
 very large cones.
 6050. *Pinus monticola*. Mount
 Raymond 8-9000.
 6051. *Pinus Lambertiana* Mt. Raymond
 8-9000.

6052. *Pinus monophylla*.
Mono Lake Sept. 1866.

6053. *Tsuga Matensiana* 200-225
feet high, 2-3 feet diam. 1-2
miles from the coast.

6054. *Ts. chrysolepis*. Sonoma Co. June.

6055. *Ts. agrifolia* Monte del Diablo $\frac{1}{4}$ mi.

6056. *Ts. Gambelii*. In meadows.

6057. *Ts. Sonomensis* Marin Co.

6058. *Ts. agrifolia* Marin Co. $\frac{1}{4}$ mi.
Tamil Rais.

6059. *Ts. Wislizeni* Engl. Umpqua $\frac{1}{4}$.

6060. *Ts. Umpqua*

6061. *Ts. " "* 18 $\frac{1}{4}$ 66. 9 feet circum.
bark white narrowly rimose.

6062. *Ts. Wislizeni* Engl. Anderson Valley.

6063. " " " " " " " $\frac{19}{5}$

6064. " " " " " " " "

6065. *Ts.* " " " " " " "

6066. a b. c *Ts. lobata*. Anderson Valley

6067. *Ts. Sonomensis* " " " " " "

6068. *Ts. Wislizeni*. Bear Valley $\frac{1}{6}$ mi.

6069. *Luzula* Gos. Valley borders of creeks

6070. *Sequoia sempervirens macrophylla* Thunb.
Redwoods of the coast.

6071. *Aira caespitosa* San Francisco
meadows. Col. Munro says: this is a variety
of that species and nothing else

6072. *Aris darwiniioides* Benth
common on all poor dry soil on
the coast.

6073. *Pistorea paniciflora* Thunb.
Oakland, moist glades.

6074. *Bryoprymnus Douglasii* Sandw ^{Hork}
sea shores of S. Francis ^{Ap. 1865.} co.

6075. *Lophochlaena California* Sonoma Co.
also Marin & Meade ^{Many S.F.} ^{Meade New} Co. Oakland
grows in all the moist meadows dry
the coast.

6076. *Melies imperfecta*, moist
glades and hillsides San Fran.
and Oakland. Ap.

6077. *Trisetum cernuum*. Contracted
from near the sea shore in unpro-
tected places.

6078. *Agrostis asperifolia*? exposed to
rough sea breezes

6079. *Agrostis asperifolia* ^{Common} San Lando Creek Mts.
delicate form - sheltered.

6080. *Elymus* Half-way House
San Francisco. Moist meadows.

6081. *Agrostis verticillata* San F.
wet places..

6082. *Polygonum Monspeliacum*
Wet places S. Francis.

16083. *Pastridium*, dry hills San Fran.
latest grass in dry places. Sept.—

16084. *Calamagrostis* Pleat:
San P. In hills among rocks also
in swamps near the coast.

16085. *Elymus condensatus*. Borders
of swamps; also at Monterey and
Carmel on the banks of Carmel
River.

16086. *Aira elongata*. moist places
along the coast.

16087. *Calamagrostis*, Yos. Valley
very common to 11,000 feet and
also on the eastern slopes of
the Sierras. (*C. Canadensis*)

16088. *Calamagrostis*, Yos. Valley
in swampy places.

16089. *Melica stricta* Bol.
Yos. Valley on Debris piles of
Cima Pendula Tree.

16090. swampy meadows Big tree
6,500 feet. common.

16091. *Sporobolus rammulosus* HBK
Yos. Valley very small also common
on the shores of Mono Lake.

16092. *Sporobolus*
Last figure of grasses in Hooker's Flora borealis
Clark's on banks in sandy soil of Big
Creek. also Yos. Valley.

6093. *Muhlenbergia gracilis* on dry rocks Yos. Valley June - July.
6094. *Vaseya comata* Thub. Banks of Mono Lake, also Yos. Valley and Upper Tuolumne River always around rocks there.

<sup>Banks of
Mono Lake</sup>
6094. ♀ Yos. Valley.

6095. *Sporobolus asperifolius* Mono Lake common. Mono Trail 9000 borders of trees and borders of hot springs - called Boiling Springs Sonora Rf. east side of Sierras.

6096. *Sporobolus ramosus* Mono Lake. gravelly soil

6097. *Stipa (elryso)phylla* ??? (not) Stipa Kingii (if new?) sp. ^{Sept} _{9700 alt} meadows on Mt. Dana and at the foot of that Mt. ^{Upper Tuolumne}

6098. *Calamagrostis Breweri* Th. Meadow of the Upper Tuolumne River common. Sept. 66.

6099. *Stipa* Valley. Yosemite, Sandy soil) *viridula* Trin.

6100. Festuca Mt. Dana.

6101. *Vaseya comata* Yos. Valley around rocks.

6102. *Agrostis Hillebrandii*. Thub. moist meadows. Big tree Grove also at alt. 9,700 feet.

6103. *Agrostis* Yos. Valley, borders of streams
 6104. *Danthonia* Meadows at Ostrand's
 occurs also at 10,000 feet alt.
 6105. *Agrostis* Clark's & Yos. Valley
 6106. *Agrostis* Yos. Valley
 6107. *Agrostis* Ostrand's & Upper Tuolumne
 6108. *Glyceria* Yos. Valley
 6109. *Stipa viridula* Big trees & Yos. Valley
 6110. *Triticum* ^{sandy soil} Yos. Valley June
 6111. *Glyceria* Yos. Valley
 6112. Big trees & Yos. Valley
 6113. *Atripis* Borders of Mono Lake.
 6114. *Poa* Mono Lake
 6115. *Poa* Ostrand's Yos. Valley
 6116. *Stipa* ^{rich arb. soil} Mono Lake ^{Pass 8000 on moraines}
 6117. *Polygonum*? Mono Lake
 6118. *Polygonum microstachya* Uticah Meadow^{Co.}
 6119. *Melica foetida* var. *bromoides*
 6120. Uticah. Throughout the Coast Range
 Melica foetida Pattiard
 6121. *Melica* Yos. Valley
 6122. *Trisetum cernuum* (true form)
 thickets along the coast in Meadow
 6123. *Phalaris californica* (fide Col. Muus)
 Large tufts along the coast.
 6124. *Sonora* in dry creek-beds also
 Yos. Valley
 6125. *Eragrostis* Cultivated fields

6126. *Eragrostis* Sonora. Cultivated fields
 6127. *Panicum* " " " "
 6128. *Trisetum* Coast common
 6129. *Fimbristylis* Mono Pass.
 Compositae

6130. Mono Lake
 6131. Foot of Mt. Dana around rocks als. Gos. Valley
 6132. Mt. Dana at 12,000. by exudation of a
 very agreeable smell. (Among rocks).
 6133. Mono Lake by sand.
 6134. Borders of streams near Mt. Dana
 also near the falls in Gos. Valley
 6135. Mono Pass (10,000) a very low shrub.
 6136. " " upon rocks (glutinous) 10,000.
 6137. " " a low shrub. 9000-10000
 6138. " "
 6139. " "
 6140. *Senecio* Mono Pass on rocks.
 6141. Shrub 3-4 feet high on Monte de Diablo
 collected in April 1866.
 6142. Shrub 3-6 feet high Mono Lake.
 6143. Borders of Mono Lake on alkaline soil
 6144. Shrub 3-5 feet high sandy fields Mono Pass
 and Mono Lake.
 6145. Mono Pass. (all in Lepid. at that locality)
 6147. Mono Lake (sandy soil)
 6146. Mono Pass.
 6148. Mono Pass

6149 Mono Paps. small shrubs

6150 " " " "

6151. " Lake " "

6152. " Paps " "

6153. Meadow at Soda Springs

6154. Mono Paps around rocks

6155. Mono Paps

6156. Oakland April

6157. Sonora Paps 9/9.

6158. Sonora Paps road also Yos. Valley & Big trees

6159. Near Bridgeport near Mono Lake

6160. Aster. Borders of Boiling Springs Sonora Paps

6161. Marin Co. San Raphael

6162. Borders of streams near Mt. Diablo 9/4

6163. Monte del Diablo

6164. Yos. Valley. Big trees.

6165. Clarkia common.

6166. Aster. At Petando's 8000.

6167. Dry hillsides at Clark's Flat - Aug.

6168. Bridgeport (on east side Sierra) on alkaline soil

6169. Yos. Valley also at the trees.

6170. " " a single specimen (seen no more)

6171. Babia. Yosemite Valley (small shrub.)

6172. Big trees

6173. Yos. Valley.

6174. "

6175. Baeckea a very small shrub 4-8 inch in crevices
of rocks Yos. Valley

6176 Valley and Big trees
 6177 Mono Paps.
 6178 Aster Yos. Valley
 6179 Helianthus Sonorus cultivated fields
 6180 Mono Lake
 6181 Higher Sierras
 6182 San Joaquin Valley
 6183 " "
 6184 Yos. Valley
 6185 Aster Mount Dana
 6186 Yosemite Valley
 6187 Coast Range at Cahto Long Valley
 6188 San Francisco Dr. Kellogg
 6189 San " " " " "
 6190 " " " " "
 6191 " " " " "
 6192 Oakland 9/4 " " "
 6193 Coast Range Apr. & May
 6194 " " " "
 6195 Carex San Francisco 9/4
 6196 " " Yos. Valley 9/6
 6197 " " Astranda's
 6198 " " Yos. Valley
 6199 " " Yos. Valley
 6200 " " " "
 6201 " " " "
 6202 " , Oakland slough 9/4
 6203 " " " " "

6204. Carex Oatland 9/4.
 6205. " " Westfall's meadows 8000. 9/7
 6206. " " Clark's
 6207. " " Mono Trail 9/9
 6208. " " Clark's
 6209. " Big trees
 6210. High Sierras 9/9
 6211. Strand's meadow.
 6212. Yos. Valley
 6213. " "
 6214. Westfall's meadow 8000.
 6215. Yos. Valley
 6216. " "
 6217. " "
 6218. " "
 6219. " "
 6220. Soda Springs Upper Tuolumne 9/9
 6221. Big T. Grove & Yos. Valley
 6222. Yos. Valley

 6223. Cyperus Valley Yosemite common
 6224. " " Placerville. Mr. Rattan
 6225. Eleocharis Yos. Valley
 6226. " " Mono Trail 9000.
 6227. Cyperus Yos. Valley
 6228. " " Yos. Valley } 9/6-7
 6229. Eleocharis Valley }
 6230. " " Yos. Valley }

6231. *Scorpius* Yos. Valley
 6232. " " Yos. Valley
 6233. " " Mono Lake
 6234. " " " "
 6235. " " Valley Yos.
 6236. Eloc. Yos. Valley
 6237. Mendocino City 9/5 66.
 6238. Clark's also Valley (Yos.)
 6239. Valley Yos. among rocks.
 6240. Big trees on Mount Raymond
among rocks
 6241. Mono Trail 9-10,000 $\frac{9}{9}$ - among rocks
 6242. " "
 6243. " "
 6244. Big tree Mount Raymond
 6245. " " & Yos. Valley
 6246. " "
 6247. Coast Range Mendocino Co.
 6248. Mt. Dana & Mono Trail
 6249. Anderson Valley Coast Range 9/4-5
 6249. ² *Lilium* Clark's big tree & Valley
 6250. Yos. Valley in moist places also Clark's.
Very common along streams at Clark's
 6251. Big trees also Valley
 6252. Big trees " " "
 6253. " " "
 6254. Tuolumne River at 9700 f. alt.

6255. *Viratrum*

Big trees 4000-9700 also in high alt. on the eastern slope of the Sierras. Always in swampy meadows.

6256 *Mentzelia*

Gravelly banks of Mono Lake. 99

6257 *Quercus (Dougl) lobata*
Mendocino Co.6258 *Ranunculus*

Strandas. Clark's (soft sand & mud)

6259. *Ranunculus tenellus* Nutt

Big trees (Wet soil)

6260 *Thalictrum*

Yos. Valley, also Mono Pass

6261. *Ranunculus*

Banks of a creek. Mono Lake

6262 *Clematis*

Yos. Valley

6263 *Aquilegia*

Rocky places Mono Pass

6264. *Malva*.

Bridgefoot

6265.

Mono

6266. Monte del Diablo - rocks

" *sppradatus* high on dry soil

6268

" " "

6269 Clark's, Big trees, Yos. Valley

6270

" " " "

6271 Yos. Valley
 6272 Mono Pass
 6273 " " ^{Arabis}
 6274 Big Trees & Yos. Valley
 6275 Mount Diables Ap.
 6276 "
 6277 Viola. Valley (Yos.) (flora white in swampy)
 6278 " " " blue
 6279 " San T. " wet meadows
 6280 Phacelia Monte del Diablo
 6281 Parkland hills
 6282 Yosemite Valley. Holesides-trail
 6283 Yos. " "
 6284 Yos. " " { dry station
 6285 Trifolium Marin Co. 9/4
 6286 Lupinus. Yos. Valley
 6287 Trifolium " Valley
 6288 " " " Mono Pass (meadow)
 6289 " " " Yos. Valley (among rocks)
 6290 Cercocarpus Mono Trail (Pass)
 6291 Spuria. Yos. Valley (Pass)
 6292 At Clark's, sandy soil, bed of Merced
 6293 Big tree Grove (Large shrub)
 6294 Debris piles Yos. Valley
 6295 Tragaria Yos. Valley
 6296 Yos. Valley on rocks
 6297 Acer " " " "
 6298 Hypericum banks of Merced Valley

6299. *Vaccinium* (blue berries) 3-4 feet
high in swampy meadows near the falls;
back of Yos. Valley on the Mono Trail.

6300. High Sierra along little streams.
10,000

6301. *Orthocarpus* Mission hills $\frac{9}{14}$

6302. " " Oakland $\frac{9}{14}$

6303. " " Mission hills $\frac{9}{14}$

6304. Dry Creek Meadow Co.

6305. Moist meadows at Ostrander's
 $\frac{9}{7}-\frac{9}{8}$

6306. *Minimus* Yos. Valley $\frac{9}{6}$.

6307. " " " "

6308. " " " "

6309. Sierra at 11,000.

6310. Yos. Valley on Water-courses

6311. Valley (Yos.) in sandy soil

6312. " " 3-4 feet high

6313. Peehees Pass June 6th '66.

6314. Dry hill-sides at Clark's

6315. *Minimus* Mono Pass Sept.

6316. " " " " " rare

6317. *Audubertia* (shrub 4-8 feet high)
Monte del Diablo Ap. '66.

6318. Oakland hills Ap. —

6319. Yos. Valley

6320. Valley " June

6321. At Clark's

6322 Yos. Valley Watercourses
 6323 Pecheros Pass Water " " fine
 6324 Yos. Valley, fls. bright blue July
 6325 Ribes Parviflora sp.
 6326. " " " " "
 6327 " " " " "
 6328 " " Yos. Trail. July
 6329 " " Upper Tuolumne R. Sept.
 6330 Canottus Valley & Big Tree Grove.
 6331. " " Of a very spreading & habit
 Big tree Grove.
 6332 Bear Valley fine
 6333 Salix Monte del Diablo /
 6334 " Mission Dolores /
 6335 " Yos. Valley fine
 6336 " (Camp 28) Sierra Mts. Aug 23rd
 Mono Trail
 6337 " Westfall's meadow.
 6338 Lonicera Westfall's meadow.
 6339 Lymph. Mono Pass, rocky station, Sept.
 6340 Orthocarpus Mission /
 6341 Umbellif. Ostrander's meadows 8000. July
 6342 " " Mono Pass Sept.
 6343 " " " " "
 6344 " " " " "
 6345 Yos. Valley
 6346 Galium Yos. Valley
 6347 " " " " "

6348. Galium Sierrae Mono Trail
 6349. " " " " " " "
 6350. " " Big trees July
 6351. Henschenii Rocks Yos. Valley July
 6352. Ledum Valley also Mono Pass
 6353. " "
 6354. Polygonum Yos. Valley June
 6355. " " Petrandal's 8000. July
 6356. Eriogonum Mono Pass 2-3 feet
 High Shrub sandy soil
 6357. ^{Eriogonum}_{Wrightii} Wrightii ^{gray} Mono Lake (sandy soil)
 6358. Polygonum Big trees July
 6359. Pentstemon Petrandal's, 8000-10000, meadow
 6360. " Sods Spring 9700 meadow.
 6361. ^{Fraseria} " " " "
 6362. Circaea Yosemite Valley (moist rocks)
 6363. Mount Dibble off 66
 6364. ^{Pentstemon} Mount Bullion June 66.
 6365. Epilobium Big trees July
 6366. ^{Pentstemon} Clark's July (sandy soil)
 6367. " "
 6368. Epilobium Big T. (Yos. Valley) July
 6369. " " " " " "
 6370. Bear Valley June
 6371. Epilobium? Big T. July
 6372. " " " " " "
 6373. Mono Pass (loose soil) Sept.
 6374. Claytonia Yos. Valley (moist places) June

6375 Claytonia San F. Apr.
 6376 " " Los Valley June
 6377 Asclepias Oakland Flora.
 6378 " " Los Valley July
 6379 Apospermum " " "
 6380 Acanthobium " " " on P. prudosa.
 6381. Cuscuta Big Trees "
 6382 Utricularia. Pools near Soda Springs 9700
 6383 Goetze Mono Rapp Deep water
 6384 Los Valley
 6385 Hippuris Pools Soda Spring
 6386 Los Valley
 6387 Kern River. Los Valley
 6388. 5-15 feet high large shrub on alkaline
 soil. Abundant along Mono Lake
 6389 Mono Rapp 3-6 feet high
 6390 Alpine meadows 8000. Los. Trail
 6391. Pools at Soda Springs Sept.
 6392. Shrub 4-8 feet high borders of Mono
 Lake; alkaline soil. Sept.
 6393 Potamogeton. Clark's also Los. Valley (pools)
 6394. Oakland $\frac{9}{4}-\frac{5}{5}$
 6395 San F. $\frac{9}{5}$ Sandy soil
 6396 Oakland "
 6397 Mount Dibble $\frac{9}{4}$ 66.
 6398 " " " " "
 6399 " " " " "
 6400 " " " " "

6401 Mono Pass (7000) 8/9 creeping in
dusty road.

6402 Mount Diablo 9/4 66.

6403=4817. Coast & Valley (Lo.)

6404 Yos. Valley

6405 Mono Pass (Borders of springs) off

6406 Mono Pass

6407 Mono Lake sandy soil

6408 Mt. Dana 8000. highest plant collected

6409 Yos. Valley 9/6.

6410 Mono Lake sandy soil 8/9

6411 " " " "

6412 Iris Big Tree "

6413 " Mono Pass Sept.

6414 Euphorbia Mt. Diablo Ap 66

6415 Near Soda Springs Sept.

6416

6417-6462 Mr. Rattan's collection
It was my intention to renumber his
plants, but was obliged to give it up,
being pressed too much by work.

Spring & Summer 66. following places

Feb - March Collected around San Fr.
First week of Ap. Mount Diablo

11 Ap. - 24 of May Mendocino Co.

6th of June Mono Pecheco Pass

14 of June to 17th July Yosemite Valley

17th July - 1st of Aug Big Trees

I August - middle Sept collected
from clouds to Mono salt

Graffes collected in the vicinity of San Fr.

No. f. ¹⁵⁵⁵ 16-15 Miles south of this city in an open swamp
Glycine
minutissima subject to overflowing by tide water. It grows in tufts occupying the more elevated places. June. Seemingly not eaten by cows.

1554 " D, About 7 M. south of S. F. in a well-wooded swamp in which it occupies the glades (Willows, Lonicera, Ilex, etc.)
Aperia
pawnee End of May. Bright green, large leaves.

50 ¹⁵⁵³ " S, In dry hills, common, forming large root stocks. Variable in size. May. June. Angel Island. Goat Isl. Oakland.

52 " H, Common in open ground and glades. Also close to the bay, where I found the largest spec. April June.

1557 " S, Very early and common on dry hills where it covers large spots. Drops early its seeds. March - June.

1558 " C, Hills and near the bay where it assumes the larger form *Poa annua*, ¹⁵⁵⁹ *trivialis*, ¹⁵⁶⁰ *pratensis* (not numbered) The first grows on the roads and cultivated or watered fields. The second was found in a canon near Mission Dolores; the 3^d occurs sparingly in the meadows at Oakland.

1546 " J. Common in moist places and dry sand which seems however watered by subterranean springs. exceedingly variable. The glaucous spec. were found among the others, but blooming much later. I have not been able to distinguish them. June

" J. *Lophochlaena Calif.* Was found in wet place in a meadow 3 M. back of Oakland. It is much liked by cattle. Seems to week to support itself. The most interesting grass found here.

1544 " J. ¹⁵⁴⁵ Was found in a fence-corner near Mission Dolores. Found in roads and meadows where it occurs in about the same manner as *Bromus secalinus* in wheat at the East. June.

1543 " H, ¹⁵⁴⁴ In large tufts. Very common especially along the bay.

1542 " H, ¹⁵⁴³ Among shrubs. common. June July

1540 " ¹⁵⁴¹ *H*. Dry places (the root bulb-like) Avoided by cattle) June

1539 " H, ¹⁵⁴⁰ In large tufts. Very common especially along the bay. Spreads its panicle while in bloom

1535 " T5. Is the *Panicum Californicum*, this name I changed
Panicum thermale

however into *P. thermale* as it is found growing always in the Geysers. Prof. Brewster has quite a number of Spec. in his collection.

No. 16. Is very common on the dry hills, in fact it occupies the place of *Pestaria Myurus* when dried up.

No. 17. I found on a dry hill near Fort Point. It is as yet but little cultivated. *Phleum alpinum*

" 18. Occupies in many places the fence corners especially near the bay and Mission Dolores.

" 19. Grows in abundance near the salt-marches at Pattleland. *Hordeum prostratum*

" 20. I described under the name *Danthonia California*.
Danthonia ¹⁵³³ *ca.* It is very common on dry hills where it is generally very much reduced in size. (*Danthonia secundiflora*)

" 21. It is common on all hills indeed it forms in many places the principal grass.

" 22. With this the same holds good only it is inclined to form tufts. May, June *Karrinia ciliata*

" 23. Occurs sparingly in the meadows at Pattleland where it is formed in the more wet places. May, June

" 24. Grows in large tufts on Angel Island in wet places. Some are very high 5-6 feet. (tufts often 2-4 feet in diameter) June

" 25. It is dioecious, grows in pure sand near the beach (April) its roots are very long and creeping. In Among (May) shrubs where it is protected against the wind it forms Specimens 3-4 feet high. Generally, 6 inches - 1 foot.

" 26. Is abundant in the salt marshes June, July

" 27. In grain fields and meadows very abundant in some places it is almost the only grass growing. June

" 28. I found in a swamp among willows in great abundance. July.

" 29. Is found in great abundance in dry and wet places

April - June

in dry places it is small its panicle spreading, globular, in wet pl. its panicle is very long and narrow.

No. 30. In a wet meadow Pattleland on the borders of a

¹⁵²⁴ little streamlet July *Aira holipennis*

" 31. ¹⁵²⁵ Common in wet places and in roads

" 31. a. Grows among 31. *Polygonum monspeliacum* " var. *fuscum*

" 32. ¹⁵²² Found in a valley (Angel Island) early in June

" 33. ¹⁵²¹ Among shrubs at the same place - East side. "

" 34. ¹⁵²⁰ *Aegopodium podagraria* On exposed precipices along the bay where it forms large mats

35. In wet places much later its authors are much smaller than those of 34. and scarcely exerted

36. Another form growing in open meadows.

¹⁵¹⁸ *Aegopodium podagraria* In a fence corner at the Willows near Mission

[37. ¹⁵¹⁷ *Aegopodium podagraria* Among shrubs late in June Pattleland.

39. ¹⁵¹⁵ In a swamp near the Willows (popular place)

40. ¹⁵¹⁴ In the garden of Cal Walker where it is the

Aegopodium ^{not} *Hordeum* principal weed.

41. ¹⁵¹³ In swamps at the Willows. *Polygonum monspeliacum*

~~42. ¹⁵¹² In a meadow at San Mateo (20 miles) South, *Triticum vulgare* Sparsely~~

43. On the borders of a rivulet at Pattleland 4-5 feet h.

^{1511.} June July. June July

44. ¹⁵¹⁰ In a garden, July *Triticum repens*

45. ¹⁵⁰⁹ *P.* Covers the dry hills early in Spring in great abundance. May *Triticum monococcum*

46. ¹⁵⁰⁸ Sparingly, inclined forming tufts *Triticum*

47. ¹⁵⁰⁷ Forms tufts at the borders of streamlets or at the foot of hills. June July *Triticum monococcum*

48. ¹⁵⁰⁶ Like 45. *Triticum Myosurus*

49. ¹⁵⁰⁵ Forms tufts of a foot in diameter on the borders of streamlets and wet hills. Its leaves have the feel of velvet when green at the lower side and are thickish *Triticum sativum*

Elymus fibrosus

N^o 50. Common at the bay and hills fine.
" 150³ ft. At the borders of the salt-marshes
Elymus ^{condensatus} Pasture where it grows very dense
like in a wheat-field. 5-6 feet high.
July 10-20. in blossom.

All these grasses with the exception of N^o 25
grow in a heavy clayey soil which is predominant.
Few seem to belong to Calif. exclusively; those
found only (?) at this coast or side of the Pacific (figs)
show a tendency to grow in tufts (cause of the
dry climate?)

N^o 1. 3. 6. 11. 12. 14. 15. 17. 20. 22. 24
25. 26. 30. 33. 34. 42. 43. 44. 46. 47. 49.
50. 51. = 24 are perennial (?)

In dried shade I found none.

The wild oats I did not enumerate, you have
undoubtedly enough of it.

~~Letter to Dr. Steyermark
June 11, 1929. No. 210~~

Just a day ago I received Steyermark's work. I have not
been able to find N^o 29. 47. 49. under those
names given in Hooker Bot. Ann. I considered them
very good, characterized spec. Nos N^o 7 is
nowhere mentioned.

1559. Miss Agrestis

1558 Elymus this form I collected late in fall
near the bay. I found it also on hills, seems to be very poly-
morphic.

4698 - 6124

Graffes

+ 5064 ♂ Agrostis

6107 ♂ Agrostis

6106. ♂ Agrostis

6105. ♂ Agrostis

6105. ♂ Agrostis

6103 ♂ Agrostis

6079 ♂ Agrostis asperifolia
Banks of Flume Creek. San J. May.

+ 6102. ♂ Agrostis Hillebrandii Thurb.
Mariposa Big-tree Grove July

+ 5070 ♂ Agrostis varians Trin.
River-bed of the upper-Tuolumne 10,000 alt.
Sept.

4861. ♂
Yosemite Valley June
Light-shady places

This is in the hand of Prof. Thurb.

6093. *Muhlenbergia gracilis* Trin.
Rocks. Yosemite Valley. June

6094. *Vaseya cornata* Thurb.
Sept. Mono Lake on the banks of creeks

4801. *Agrostis virescens* fide Muens
Anderson Valley Coast May

6116. *N Stipa Richardsonii*?
Mono Paps 8000 alt. (on moraines)
(Send the favor and see if my determination is correct)

6109. *N Stipa viridula* Trin.
Yosemite Valley (sandy soil) June

+6097. *N Stipa Kingii* spec. nov.
Upper Tuolumne Meadows Sept. (9700 alt.)

{ 6099. *N Stipa viridula* Trin.
5078. *n Big tree Grove* (6500 alt.)

{ 4865. *n Stipa occidentalis* Thunber
dry sandy soil. Yosemite Trail (8000 alt.)

{ 6075. *N Lophochlaena California* Nees
Moist meadows May. San Fr.

{ 6074. *N Brizoprynum Douglasii* Hook.
dry sand. Ap. San Fr.

+6073. *Festuca paniciflora* Thunb.
fide Therb.
— *occidentalis* fide Muens
Moist groves Oakland Mai

6073. *Aira danthonioides* Trin.
Moist meadows Oakland Apr.

+6074. *Aira cespitosa* var. *densiflora*
Moist meadows San Francisco. May

+5019. *Trisetum subspicatum* var.
Upper Tuolumne River. Moist meadows
Sept. // Although this differs considerably from the
true form yet I cannot regard it anything else
but a variety. //

+6104. *Dactylis glomerata* Nutt.
Meadows Yosemite Trail 8000 alt.

6118. *Festuca microstachys* Nutt.
Ukiah Mai

6119. *Melica paucoides* Nutt. var.
bromoides Bol.
Open woods Coast Range May

6120. *Melica paucoides* Nutt.
Dry hillsides S. T. Apr.

6121. *Melica paucoides* Nutt. var.
inflata Bol.
Yosemite Valley June.

4698. *Melica paucoides* Nutt. var.
prolificans Bol.
Near the Coast. Mendocino Co. May.

*6124. *Vilfa*
Sonora. Dry creeks. Sept.
In the hand of Thunb.

4704. *Pestuca miersstachys* Nutt. var.
Polyphylla Bol.
Woodland. Anderson Valley May.

+4840. *Panicum dichotomum*
Yosemite Valley June

*6090. *Cirsia pendula* Trin.
Moist meadows. Big tree-Grove July

+6070. *Hierochloë grandifolia* Thurb.
Redwoods Coast Range Ap.
Col. Mann thinks this is a mere variety
of the *H. borealis*.

+6085. *Elymus condensatus* Presl.
Banks. Alameda San P. June

*6083. *Gastridium australe* Presl.
Dry hills. San P. Sept.

6082. *Polygonum Monspeliacum*
Moist soil. S. P. May.

*6081. *Agrostis verticillata* Vill
Creeks San P. May

*6080. *Luzula* -

+6076. *Melica imperfecta* Trin.
Woodlands near San P. Apr.

L.

+6001. *Vaseya cornata* Thurb.
Yosemite Valley June

+6084. *Calamagrostis Alutacea* Trin.
Cattail Hills June

+6059. *Melica stricta* Bol.
Yosemite Valley June

+6098. *Calamagrostis Breweri* Thurb.
Upper Tuolumne 9700. Meadows.

+6071. *Calamagrostis*
Mount Dana 12500 alt.

+6088 *Calamagrostis Canescens* ?
6087 Yosemite Valley

+4766. *Calamagrostis*
Sloamy soil Meadow. May, June

+6096. *Sporobolus ramosus* HBK.
Mono Lake. Sept.

+6095 *Sporobolus asperifolius* Nees & Mey.
Mono Lake Sept.

+6092. *Vilfa deflexa* Torr.
Yosemite Valley. June

+4836. *Sporobolus airoides* Torr.
San Joaquin Valley June.

+6091. *Sporobolus*.
Yosemite Valley June
In the hand of Thunber.

6100 *Festuca rubra* (fide Thunber)
+5066. Mount Dana 11,000 alt.

6114. *Glyceria airoides* Thunb.
5044 Mono Lake

+6115 *Poa*
Yosemite Valley July

6014. *Poa arctica* R.B. fide Thunb.
Higher Sierras. Sept.

+4705 *Poa brevifolia* Mackenbr.
brachyphylla Schult
Stand Synop. P. 361.
Woodland. Mendocino Co.

6192. *Trisetum cernuum* Trin.
Woodland. Mendocino. May
this is the true form as described by
Trinius.

Those checked (x) are on present "list".

Plants collected this spring (Ap. 65) in the foot-hills of
the Sierra Nevada from Sacramento to Forest Hill.

4500

Wet places especially among grain; it forms large patches often 10-15 feet
in diameter. Very fragrant and much infested by bees. The succulent
stems are all procumbent. The roots fibrous white and slender. 9/4 65

Flowers slightly touched with pink. Sacramento V. 4-5 mi from Sa.

4501. Grows among and with the preceding species; scarce.

4502. Trifolium, wet places in meadows near Sacramento

4503. Coarse looks like *C. Douglasii* (Benth?)

In light sandy soil at Freeport 15 mi below Sacramento, gregarious

* 4504. Meadows near Freeport Sacramento V. 9/4 65.

4505. Among 4504.

4506. *Echinospartium* Meadows Sacramento V. near Freeport
Auburn 10/4 65

4507. Hillsides (on red clay)

4508. with the preceding.

* 4509. *Sonicula tuberosa*. Hillsides with the former plentiful
but scattered.

4510. *Ranunculus*. Like the sp. 4509. and with it.

4511. Rocks on hillsides.

4512. Shrub 8-10 feet high, rather slender not spreading
Hillsides of the North branch of the North American River

4513. *Deltaprinium* Hillsides of the N. Am. River

4514. Upon rocks in the bed of the N. Am. River.

4515. Also among large rocks with the former

4516. *Mimulus* Under moist rocks on the banks of
N. Am. River.

4517. Hillsides of the North Am. River.

4518. Hillsides near Auburn

4519. Hillsides plentiful but scattered Auburn.

4520. Hillsides Auburn
 4521. Rocky gravelly hillsides Auburn
 4522. Esch. Hillsides of North Am. River.
 4523. Lysim. Hillsides "
 4524. Hillsides of North Am. Very plentiful
 the outside petals yellowish up to the point where they
 join the 3 inner petals which are white.
 Auburn 11/4 65

4525. Around moist rocks, the roots mostly under them
 4526. Shady hillsides, rootstocks large, whole plant
 glutinous and of a strong resinous smell.
 4527. Erythronium. Shady hillsides, loose soil
 4528. In a spring (on rocks).
 4529. Iris. Shady hillsides
 4530. Cyathophylloides. Among rocks, North Am. River
 4531. (flowers white) Among rocks " " "
 4532. Rubus. Thickets in a ravine " " "
 4533. Hillsides of the same ravine " " "
 4534. Coates' sents? Among rocks " " "
 4535. Among rocks River banks of " " ,
 4536. " " " " " " "
 4537. River banks of the " " " " "
 4538. Rocks in the bed of the " " "
 4539. Trifolium. Wet places (slight depression)
 *4540. Hillsides in large patches.
 4541. Among shrubs
 4542. with the former
 4543. moist little flats.
 *4544. Viola chrysanth., flats (moist gravelly)
 4545. same as the former.
 4546. Trifolium. Flats
 4547. moist flats

(all within 3 mi of Auburn)

4548. On flats
 4549. Meadows
 4550. "

Collected on the stage road from Auburn to
 Forest Hill. 12/4 65.

4551. Borders at a pond Grizzly bear house
 Porous large dense patches.
 4552. Dry hill sides. Same station
 4553. Among shrubs in loose light soil (s. locality)

Forest Hill 13/4 65.

4554. Taxus, a beautiful tree 20-30 feet h. 8-15 in diam.
 with long slender drooping branches. Common there. Devil's
 Gulch, between Forest Hill and Yankee Pines.
 4555. Cornus ssp. 10-15 feet high. rather straggling
 on moist shady hillsides
 4556. a low 3-4 feet high shrub. rare.
 4557. Beaufortia prostrata, forms dense flat patches
 around trees and shrubs, has only the flowers ascending
 4558. Beaufortia. North hill side of the Gardnerville Canyon
 4-6 feet high. branches erect, slender and numerous
 4559. Asclepias. Same locality as the preceding
 4560. A low straggling shrub, Hillsides
 4561. Shady places New Castle.
 4562. with the preceding
 4563. Dry hill sides New Castle.
 4564. Dry gravelly soil New Castle
 4565. Moist places New Castle.
 4566. Moist meadows New Castle.
 4567. Dry hillsides " "
 4568. " " " " "
 4567. moist hillsides " "
 4568. Dry hillsides " "

" } by mistake

4569. *Luz* hills New Castle. (*Nigropappus leptostachys* ^{cladus})

4570. " " " "

4571. " " " "

4572. " " " "

4573. " " " "

4574. " " " "

4575. *Ranunculus* light loose soil around shrubs
in rather moist localities. 15/4 65.

4576. *Sentellaria* like the preceding

4577. Hillsides, common

4578. Dry hillsides New Castle

4579. Hillsides near the Middle Port of the
North Am. River.

4580. Among rocks dry hills New Castle.

4581. Hillsides " "

4582. *Viola*. moist meadows " "

4583. Hillsides in shady places, Grizzly Bear St.

4584. Hillsides New Castle.

4585 - 4617 mosses to Sull. et Lesq. ^{2 sp. new to Calif.}

4618 - 4620 hepaticae to Austin. ^(one sp. new to science)

4621 - 4626. lichens to Prof. Tuckerman ^{one sp. new}

4627. *Viola*, Hillsides Forest Hill

4628. *Callipepla lutea* Roadsides near New
Castle the same sp. flowers at the Coast Range
about the middle of June.

4629. moist Hillsides Forest Hill 15/4

4630. Cañon of the Dardanelles upon a moist
rock on the border of the stream, rare.

4631. *Ranunculus*. ^{found in} Forest Hill

4632. *Salix* Creek New Castle.

The paucity of many species is owing to the early season, but a
week before snow had fallen at Forest Hill. The compositae are more
or less all too young; but as I was there, I took what I could find.

1.

Plants collected June 1867

From Cloverdale to Ulrich, Long Valley, Mouth
of Mattole River thence down the coast
to Noyo, Mendocino City & Anderson
Valley. (Northern part of Sonoma Co. Mendocino Co. and
Southern part of Humboldt Co.)

6463 *Pestaria* moist Wood in Mendocino & Humboldt
6464 *Melica gracilis* var.

Redwood-grove at East Fork Elk River

6465 *Aegopodium*. moist meadows. Cloverdale

6466 *Aegopodium* sea shore Fort Bragg

6467 *Fragaria* " " " "

6468 *Triticum* Very dry hillsides

south side. Elk Ridge. 1576.

6469 *Stipa* (moist places Red Mountain Humb. Co)

6470 *Calamagrostis*. Grows on bluffs along
the sea shore in the Mattole District
(pieces of rocks) it seems to be the same
species I collected at an alt. of 12000
on Mount Dam.

6471 *Calamagrostis*

Sphagnum swamps between Noyo and
Albin Rivers. Of this I sent formerly some
old panicles and a few stragglers
collected in Sept. 65. In the same
swamps occurs also Cal. *Aleutica*, this
species may be distinguished far off
from the other. Besides these two of
these swamps I sent a 3^d one, only a few
inch high 6-8; panicles spike-like
1-2 in ch.

6472 Agrostis with the former 6471
 6473 Malva Bear Harbor Mendocino Co
^{20/6/67} 3-6 feet high; tufted like the cultiva Hibiscus
 6474 Cypripedium Swamps on Red Mt.
 Very common there; flowers
 with a yellow tinge.
 6475 Carex Swamps Red Mt.
 6476 " " " "
 6477 " " " "
 6478 " " " " "
Compositae

6479 Burrielia. Sea coast at Fort Bragg
 6480 Hieracium Open woods Mendocino Co
 6481 Aster Elk Ridge Humboldt Co
 6482 Artemesia Sea coast near Shelter Cove
 6483 " " On quicksand at Fort Bragg
 6484 Roadsides near Mendocino City (common)
 6485 Open Woods Humboldt Co
 6486. Hieracium Red Mt. Humb. Co
 6487 Burrielia Shelter Cove
 6488 Gnaphalium Sea coast at Port Bragg
 6489 Sea Coast at Port Bragg
 6490 Chrysopsis Sea coast Noyo
 6491 Helenium Bol. From Shelter Cove
 down to the Albion River over the coast
 in moist open meadows and Sphagnum swamps
 very common, quite a feature

6492 Dry hills Cloverdale $\frac{1}{6}$ veg brittle stem.

6493 Grindelia Tufts sand sea shore near Big Flatt Humb. Co. common

6494 Maeromphyes Red Mt \pm Humb Co

6495 Dry loose soil near Red Mt \pm also formerly collected near Santa Cruz and seen at this last place also this last May.

6496 Cirsium. Swamps Red Mt \pm 5-6 feet h. much branched, branches terminated by small heads, as the old remaining stalks showed clearly. The young ones were not sufficiently advanced. But I found it on the coast in similar stations near Fort Bragg but here it was not so tomentose, woolly as on the Mt \pm (yet apparently the same)

6497 Cirsium. Liverworts Fort Bragg

6498 Crepis Dry hillsides near Elk Ridge (loose soil.)

6499 Bahia. Sea Coast. Bragg

6500 " " Shelter Cove

6501 Aricia Dry soil among Chaparral Humboldt Co.

6502 Calais Cloverdale moist meadows also at Shelter Cove; formerly collected at Eel River bl.

6503 Maeromphyes Open pine wood. Middle dist.

6504 Calais. Swamps at Fort Bragg
very common there.

6505 Carex laevigata. Shelter Cove Sea Shore
also at Fort Bragg, forms large
patchy tufts, stems on the ground
only the head rising above the grass.

6506. Thickets near the coast at Shelter Cove
Humb. Co.

6507 Lupinus moist places near the coast
at Fort Bragg. Ten-mile river

6508 Open wood Coast Humboldt Co.

6509 Trifolium. Sand grassy-soil Mendocino

6510 Open Wood near Little Bear Harbor

6511 Open " " Coast Range

6512 Lupinus, white. Banks of Rancheria
Creek. Mendocino Co.

6513. Hosackia swamps Bragg

6514. Rosa Mattole Dist. and East
Fork of Eel R. 3-4 feet high.

6515. Spiraea Redwood Coast B. near
Bear Harbor.

6516. Primus. Park's Station Eureka Trail

6517 Silene Red Mt. Humb Co.

6518 Stellaria Thickets T. Bragg.

6519. Silene (bright red) along the coast

6520. Stellaria East Fork of Eel River

6521 Dry meadows Elk Ridge

6522 Open wood Mattole Dist -

6523. Deep Cañon Eel Ridge Mendocin Co.
 6524. Meadows Eel Ridge
 6525. Lambert's Lake Mendocino Co.
 6526. In hillsides Eel Ridge
 6527. Red Mt.
 6528. Upper Crossing of Mattole River.
 6529. Saxis. Rocks deep Cañons. Humb Co.
 6530. Deep Gulch at Noyo
 6531. East Fork at El River at Wood's Ranch
 6532. Deep Shady Gulch at Noyo.
 6533. Water courses at Cotton abg Creek
 Mendocino Co.
 6534. Penstemon Shelter Cove Humb. Co.
 6535. In hills at Cloverdale Son. Co.
 6536. Shelter Cove & Noyo in cultivated
 fields.
 6537. Orthocarpus Sea coast at Noyo
 6538. " " " " " "
 6539. " " " "
 6540. Penstemon Same places in Russian
 River beds at Cloverdale
 6541. Same locality as 6540
 6542. Pyrola Redwood and swamps
 at Noyo
 6543. At Parker's Station Eureka Trail
 6544. Pyrola Open Woods same as 6543
 6545. Swamps at Red Mt.
 about shrub 1-2 feet h.

6546. *Ledum* Swamps at Noyo a
very fine shrub (a profusion of flowers)

6547. *Pyrola* Open Woods Elk Ridge

6548. Swamps at Red Mt²

6549. *Veratrum* at Shelter Cove

6550. Swamps at Red Mt²

6551. *Symplocarpus* Deep Gulch at
Noyo. rare

6552. Red Mt²

6553. " "

6554. " "

6555. " "

6556. Rocky places Eureka Trail.

6557. *Lilium* Noyo swamps.

6558. *Lilium* Coast Range, Red Mt²
Middle Dist. evidently our white
Lily of the Valley.

6559. Swamps Red Mt².

6560. *Dicentrosturm*. Divide of Russian
an Eel River then northward; open
woods in deep clay soil.

6561. Rocks near Elk Ridge

6562. Sea Coast Noyo

6563. Shady banks Elk Ridge

6564. Drift sand Sea Coast Noyo.

6565. *Ledum* Elk ridge on rocks

6566. *Ledum* On loose dry soil near Elk Ridge

6567. *Enionymus* Volcanic rocks near Long
Valley —

7.

T. valicipius

6568 *Rumex* Sea coast at Shelter Cove

6569 *Eriogonum* Shelter Cove ^{found near}
glandulare

6570 *Ribes* 4-10 feet high leaves
as large as those of *Acer macrophyllum*
Common on the banks of Cotton aby brash
20 miles north of Noyo.

6571 *Ribes* Low shrub near Red Mt.

6572 *Nuphar* Lambert's Lake near Eel
River Mendocino Co.

6573 Redwoods between Little Bear Creek
for & Noyo. Generally near *Quercus*
densiflora.

6574 *Sambucus* Coast north of Noyo.
berries red.

6575 *Phoebe* ^{now} Cotton aby Creek

6576 Sandy fields, Sea coast, Noyo

6577 *Pellaea* Rocks Elk Ridge

6578 *Adiantum* Swamps at Red Mt.
entirely unshaded station
forms immense high tufts.

6579 *Garrya* Low shrub Red Mt.

6580 Swamps Red Mt.

6581 *Juncus* Swamps Red Mt.

6582 *Cyperus* Lambert's Lake

6583 *Luzula* Deep Gulch Noyo.

6584 *Juncus* Ponds near Elk Ridge

6585 Dry hill sides near Elk " "

6586. *Salix* Large shrub, sometimes tree in Mission R. bed at Cloverbale June 6th

6587 Iris common on Red Mtz

6588 Linn Hills at Cloverbale

6589 Cloverbale, dry hills

6590 Lobelia ?? Lambert's Lake

6591 Campanula ?? Swamps at Noyo

6592 Ceanothus flow. blue, stalk long slender; open woods Humb Co.

6573 Mission hills 9/4

6574 Orthocarpus Marin Co 1/5 67

6575 Carex Bean's Ranch near Santa Cruz 9/5 67.

6070! Hierochloe macrophylla Thurb. (in Report. Cal. State Survey.)
Col. Munro declares it to be borealis.
" " as distinct species, as aside from

Bolandas Grases

Collection of Hbl.

Copy of notes sent Doct. Gray Feb 27 1868. L. G.
Bolandas Mr. list & his notes are copied.
My notes are put in [brackets] fig. 7.

Room - 0 -
6469. 6109. 5078. 6099. 4865. 4692! Stipa Vireonae var
It is possible that a more lengthened examination
might be able to find some constant differences
[Some Specimens have a very slender and much elongated
panicle but I think them all rightly referred] Yosemite Valley
& Big-tree Grove.

6070! *Hierochloe macrophylla* Thurb. (in Report. Cal. State Survey.)
Col. Munro declares it to be borealis.

[This seems to me to be a distinct species, as aside from the very large leaves (12'-18' long & 4"-6" wide) the glumes are always strongly 3-nerved & greenish (never becoming brown), very obtuse, and barely equaling the sterile florets, which are notched at the broad apex, & often with a narrow or short awn. Should be compared with *H. repens*, Host, which is generally referred to *H. borealis*.] Redwoods, Marin Co.

4840! *Panicum dichotomum* Scim. Yosemite Valley.

6127! *Panicum sanguinale* L.

4802. *Stipa setigera* Presl. fide Col Munro.

Standels description agrees with it as perfect as could be expected from any descript. Prof. Thurb. however calls it *St. Eminens* Cav. (see my sets publ. before).

[I find no number 4802, in either Brewers set or in that of the State Survey. In the latter set are very fine specimens of *S. setigera*, with the copious panicle beautifully tinged with purple, these have no number, and are marked "Stipa Eminens, Monte del Diabolo 0/4" I have not his previously published set of grasses & do not know what I then called *S. Eminens*. The chief distinction between the two is that one has the palea hairy all over, & the other only partially so.]

5020! 5038! *Stipa occidentalis* Thurb. (in Rept. Cal. Geol. Survey, inc.)

[A very distinct species with a plumeous awn, which I first met with among the grasses of the U.S. Expl. Exped. from Oregon.] Yosemite Mtn. Alt 8000 ft-

6469. 6109! 5078! 6099! 4865! 4692! *Stipa Viridula* Trin
It is possible that a more lengthened examination might be able to find some constant differences

[Some specimens have a very slender and much elongated panicle but I think them all rightly referred] Yosemite Valley & Big-tree Grove -

6116! *Stipa Richardsonii* Link ???

2

[The contracted panicles, long upper palea, caducous awns and short vaginæ do not agree with the descr. of *S. Richardsonii*, but do with that of *S. Sibirica* of Lamarck. I shall no specimens of either please compare, also with Ledeb. Icon. Pl. Altaiic. t. 99] Mono Pass. alt 8000 ft.

6097! *Stipa Kingii* Bol. sp. nov.

In honor of Clarence King my gallant chief in the exp. of 1866 across the Sierras.

[A very pretty species allied to *S. mucronata*, from which it is distant] Upper Tuolumne Meadow, alt 7700 ft

6096! *Vilfa (Sporobolus) ramulosa* H. B.

Sporotolus ramulosus Kunth.] Mono Lake.

6095! *Vilfa (Sporobolus) asperifolia* Nes & Mey.

[*Sporotolus asperifolius*, Nes & Mey. - with smoother foliage than I have before seen] Mono Lake.

4836! *Vilfa arioides*, Trin

[*Sporotolus arioides* Trin.] San Joaquin Valley, June

6092! *Vilfa depauperata* Torr.

[The form labelled by Nutt in Herb. Acad. "Sporotolus nodosus"] Yosemite Valley.

6091! *Vilfa (Sporobolus)*

[*Vilfa depauperata* Torr. var *filiformis*.

Brewer collected this in the Sierra Nevada & I have put it with *V. depauperata* - and on examining it now I can do nothing else with it. It is just the *Sporotolus filiformis* Nutt. Herb. Acad. *V. depauperata* was founded upon a very diminutive specimen; it varies greatly, & the largest form has been called *V. utitis* by Torrey. We must either regard the present as one of its forms, or make a half dozen or more

new species. Many flowers in this have a distinct 3
mucro, but it is not constant.] Yosemite Valley,
6124! *Vilfa*

[*Vilfa regens* Trin.? I had this a long while ago
from Blakist & Bolander. The best I can do with it
is to refer it as above. It does not quite agree
with Trinners' figure (Trin. Icon. t. 250.) but the differ-
ences are not so great as between his descriptions
in the Icons & in his Agrostidæ.] Serrur.

6472! *Agrostis canina*, Linn.

The flowers of my specimens are larger than in the
sp. I know from other parts of the world. (No locality)

5070! *Agrostis separata*, Trin. Alpine form.

River bed of Upper Tuolumne alt. 10,000 ft.

6105! 6078! 6079! 658 of Bremer and Gray No 42. No 5. 3a. 18 of
my grass sets belong to *Agrostis separata* Trin. This sp.
includes *Agrostis microphylla* Steud.

6102! *Agrostis Hillebrandii* Thurb. (Rep. Cal. Geol. Survey) (ad)
Mariposa Big Trees.

4801! No 34 of set. *Agrostis pallida* DC. filia Thurb.
See Trinno makes it Ayr. Wisconsin & Mexicana HB.
I have carefully compared different descriptions
Steudel & Kunths in his herpl. Both are at variance
in some important points. Prof Thurlers determina-
tion I like better, though my Europ. Specimens are
much smaller. Anderson Valley Coast.

6465 *Ayr. pallida* DC.

6465 b. same, but annual.

6103! *Agrostis vulgaris* - with

4954! seems to be a sickly state of *Ay. vulgaris*.

6107! 6106! 4842. *Agrostis scabra* Willd

5064! Agrostis. I shall leave this to you to decide.

4

[Agrees very well with Agrostis lecontei, Trin. but has more rays to the panicle - Please compare] loc.

6466. Agrostis. May be omitted until I can procure better specimens

6093! Muhlenbergia gracilis Trin. Yosemite Valley.

6090! Cerina arundinacea Blk pendula, Trin.

[C. arundinacea Trin var. pendula, Gray. I have not before seen this from California] Big tree Grove.

6082! Polyphyllon monspeliacum Desf.

6083! Gastridium australe Beauv.

6094! Vaseya connata Thurb.

[Remarkably fine specimens come 2 1/2 feet high with purplish panicles & the culms more or less tinged. No locality given]

6084! 4762! Calamagrostis atlantica Bong. [Trin.]

6098! Calamagrostis breweri Thurb. (in Rept. Cal. Geol. Survey inc.)
[One most delicate species; first collected by Prof. Brewer in Aug. 1863. Near the summit of Leasons Pass. Alt. 8000 ft. & by Mr. Bolander in 1866 in the meadows of the upper Tuolumne, Alt. 9,700 ft.]

6088! 6087! Calamagrostis canadensis Michx.

6470! 6071! Cal. sylvatica Sc.

Cal. Stricto not numbered, but occurs in
Yosemite V. and the higher elevs.

6471! Calamag. next likely to varia.

[My specimen of C. varia is a very poor one - indeed I am nose off in Calamagrostis than in almost any other large genus. If new - and I am inclined to think it may be, call it C. Bolanderi Thurb. & keep the name for naturalized]

4787. 4766! Culamagrostis laevigata Trin [Bolander in one of his notes seems to be quite satisfied with his determination - I have only one very young specimen of G. laevigata.] 5

6112. 6071! Aira caespitosa Scop. var. ciliata Muell.

Aira elongata - no number

6072! Aira danthonioides Trin

4758 { loose panicle forms of Trisetum cernuum Trin
4744! { compact panicle forms of T. cernuum,

[This I at one time took to be a form of T. cernuum, but was not satisfied with it. The excellent species in this lot convinces me that Nuttall was right in treating it a new species; it is T. glaucum Nutt. in Herb. Acad. and the same which Buckley (applying Nuttall's name) called T. canescens. Whether priority of publication makes it in this case nealy to adopt that there is no doubt. It is intermediate between T. cernuum Trin & T. flavescens L. It differs from the former in its more dense & strict panicle & its much longer & narrow lower glume. Its hairy awns & more robust habit distinguish it from T. flavescens.]

5019! Trisetum aegyptiacum, var. muticum Bol.
There seems to be but little doubt that these sp. must be referred to this species.

6104! Danthonia sericea Nutt.

4705! Poa brevifolia Muhl.

[Judging from the description & Reichenbach's figure it will do for Poa cenisia All., of which I have no specimens. I certainly is not P. brevifolia Muhl.]

6113! Strophis californica Muell.

5073: 5068! 5076! Poa alpina, L.

6115! Poa sylvestris, Gray.

[Probably this species with the culm less filamentous] "older specimens agree very well with those sent to me by Dr. Engel." Blande.

6014! Poa leptocoma, Trin.

[This is the same as Parry's No. 376. referred to Poa arctica (Dcneffiley) in the Enumeration. I cannot at present draw any letter with it. Poa leptocoma is described as with wavy glumes & higher lemmas.]

6126! Eragrostis paucoides, var megastachya

6125! Eragrostis pilosa, Beauv.

6074! Bryozoysum Douglasii, Hook.

5026. Glyceria paniciflora, Rost. (6111!)

6108! Glyceria fluitans. R Br.

5044! 6114! Glyceria acutoides Thurb.

Glyceria acutata. Not numbered.

6075! Scoparia californica Nes.

6076! Milium imperfectum Trin.

6119 or 6120! Melica paucoides, Nutt. This form was also collected on Mt. Davis.

6121! Melica paucoides var inflata Bol.

6119! Melica paucoides var bromoides Bol. No 40 sets.

4698! Melica paucoides, var acuminata Bol.

Melica stricta Bol. Nutt. 47 sets.

Melica paucoides var breviaristata Bol.

(my number 53 sets) Redwood, Humboldt Co. 187. also at Santa Cruz. Col. Munro considers this a new sp. of Melica & Prof. Thurber left it undetermined.

4861! Melica aristata. sp. nov.

6118! Festuca microstachys var. ciliata

6073. Festuca-pauciflora, Thunb.

6100! 5067 ± 5066! Festuca violacea, Gaud.??

[This is called F. rubra in Parry's Rocky Mt. plants & is the F. rubra of Bourgeau's collection. Bentham puts F. rubra under F. ovina & very properly as I think. This should be F. ovina var. rubra or violacea if it more nearly resembles that form.] alt. 11,000 ft.

6085! Elymus condensatus Reichenb.

6080! Elymus sibiricus L.

5023! Triticum caninum, Schreb.

[This is what I have called, from description only, Triticum vidaceum Hornem. - vide Anderson Trans. Scand. p. 5 - we have no root to these specimens]

6468 Triticum aegilopoides could it be T. dicoccum of Gray.

[I have no specimens in either Brue's or the Skal-set]

(Bolander speaks of an undetermined Festuca. "It is the last Festuca in my sets and 4704 of late" In this case I have no specimens to identify it by, though I probably have it from Brue's Collection -

4669. is a Lepturus which he speaks of working out so I will leave it for him. It is quite distinct from L. paniculatus in its triple spike, the position of its glumes, armed panicle with a tuft of hair at the base, &c. - It should be compared with 8 other species)

6110! Triticum repens mixed with T. aegilopoides Gray

2d. Set of Grases given California State Survey

1525-2493

Lersia oryzoides var.

Cache Creek - Bolander 2418.

Phalaris intermedius Bise.

Swamps San Francisco Bolander 2287.

An unusually large form with large branched culms
4-5 ft high & branching from the lower nodes. The
spike narrow & interrupted. 2 lvs almost H. some
hairy from sea -

Holcus lanatus L.

Swamps San Francisco - Bolander 2270.

det -

Hierochloe

Redwoods of Marin Co - Bolander 2279.

Beckmannia eruciformis Host -
Oakland Hills - Bolander 2284.

Paspalum distichum L.

Clear Leake - Bolander 2417.

Panicum capillare var major.

In garden, Colorado Valley Dr Cooper 2228 - Virginia City
Nevada Ter - Bolander at H. G. Bloomer 2265 - Clear Lake

Bolander 2420 -

A variety common from West of Rocky Mts & on Pacific coast.
The panicle has strong rays. Spikelets $\frac{1}{2}$ in. long, acuminate
& usually short pedicellate -

Panicum crus Galli

Colorado Valley - Dr Cooper 2227 - Napa Creek, Bolander 2418.

Panicum dichotomum L.

Dry sandy soil in Yosemite Valley at 4,500 ft. Alt. common
on sand & among rocks - Dr Hildebrandt Brewei 1846.

it form corresponding with *S. nitidum* Lam. No. 2169 collected by Prof. Brewer around the hot springs south east of Bakersfield is probably a form of the same but the specimens are too imperfect for accurate determination.

Eriocoma cuspidata Mitt.

Top of Providence Mt. & west to Cajon Pass. 2223 Dr Cooper.

Stipa occidentalis Thunb.

Virginia City, Nevada Ter. H. G. Blooms - 2261-

Add descr.

Stipa setigera Presl -

San Francisco - Bolander 2280, San Diego Dr Cooper 2233
The last with nearly naked culm - seems thin!

Stipa viridula Trin.

Big Trees, Calaveras Co. Dr. Hillebrand. 2255-
a form with elongated panicle

Aristida californica Thunb.

Fort Mohave Dr Cooper. 2217

Add descr

Agrostis leuca -

Calaveras Co. Dr. Hillebrand 2249 - 2250.

Agrostis verticillata

San Francisco - Bolander 2294.

Agrostis asperifolia Trin?

San Francisco Bolander 2272 - 2286 - 2295-
all tall forms wishbone awns - no 2268 by H. G. Bloom
Nevada Ter is probably a young & smooth state of the same.

Agrostis vulgaris altu s. (bulgaris)

San Francisco Bolander - 2271.

Agrostis capillaris Trin

Various forms, San Francisco. ~~Bolander~~ 2493, 2278.
2282, 2283, Calaveras Co Dr. Hillebrand, 2248.

Agrostis murina Trin?

Calaveras Co. Dr. Hillebrand. 2247.

Agrostis

8 n.s.

Culveras Co. Dr. Hillebrand - 2251.

Add descr

Phleum pratense

Sumps & streams Bolander 2290 - Culveras Co -
Dr. Hillebrand - 2243.

Phleum alpinum.

Head of Tuolumne river Brewer 1765 - Silvis valley, Brewer
1965. Blue Mountain Brewer 2073. Calaveras Co. Dr
Hillebrand 2242.

Alopecurus genistinus
var aristatus.

Virginia City, Blooms 2260-

Polygonum Monspeliacum

Camps Candy Mohave River Dr Cooper. 2220.
and var? fuyag-

Sporobolus asperifolius Stev & Mey.

Virginia City Nevada Ter. Dr. G. Bloomer 2264.

Sporobolus airoides

Fort Mohave - Dr. Cooper 2231.

Vilfa despauperata Zorn.

Sierra Nevada 4000 to 6000 ft. Prof. Bremer no number

This appears to belong species is variable & has a wide range extending from Oregon to Mexico. One extreme is *V. utilis* Zorn. The species are like *V. filiformis* & *V. curvifolia* in habit in Herb-Acad.

— Aridina? Marcy 2237

Rhynchospora communis

Lower Lake Oregon R. Cooper 2222. Clear Lake, Bolander 2242

Culmagoystis Clethra Trin

Biklund, Bolander 2274.

Correct last list

Culmagoystis Gunnarsson

Gullane Co. Dr. Billebrants 2244 - & a slender form 2245.

Culmagoystis Breueri -

Valley near summit of Carson Pass - alt. 8000^{ft} - 2128. As of Breuer sent to Gray.

Pleuraphis - sp. *rigida*, n. sp.

Fort Mohave - Dr. Cooper 2230 - grows 4 ft high
add descr --

Bromelium polystachyn

Grand Prairie at Fort Mojave - Dr Cooper 2241

Bromelium oligostachyn

Summit of Piñon Mountain - Dr Cooper 2226.

"called Buffalo Trap" a name which probably belongs to Buckhorn
This is a very shrubby specimen.

Arin (Deschampsia) Despiciens var.

Big Tree Laramie Co. Dr Hellebrand 2246-

A form with hairy blackish purple flowers with scarious margins.
Lower leaves not seen. Renier Arin in other coll. side H. Ross.

Frisetum subspicatum

Near summit of Silver Mountain 11,000 ft. Brewer 2044 - Aug 5 -
Also in 2002 - not on list & loc not given.

Frisetum subspicatum var. mollis

Mo-1947 - ~~no loc. & no look~~
(common on Big Tree road. 5000 - 6,000 ft. July 20 -
Brewer 1947 -

Fruehia pulchella

Fort Mohave - Dr Cooper - 2218-

"Astropis Californiae" Munro in Herb.

S. non Rus. Brewer 1926 ¹⁹²² (2077? but too poor to decribe)
Silver Mt. 8000 - 9000 alt. Brewer 2078 ^{Yosemite trail 6000 - 7000 alt -}

Brewer 1625. (2003 no loc.). San Diego. Slopes 2240, + 2232 -

2292 - 2004 no loc.) Carson Rus. Brewer 1959.
Virginia City Nevada 2000 - 3000 ^{2266 - 2269} -

See notes to last list. 2 miles the numbers quoted belong there
though the species vary greatly, yet not more than other grasses
which have a wide range in altitude & difference of situation

Poa annua -

San Diego - Dr Cooper - 2238 -

Poa trivialis

var. *trivialis* Bolander 2277.

Bromus spicatus

Saline soil on the islands in — (Mona?) Lake - 6,500 ft alt. —
Bromus on saline + alkaline soils at various altitudes

Bromus spicatus var. *strictus*

Brush at Soda Lake - sink of the Mohave
October 2221.

" *Melica mucronata* L.
Silv. Calif. - 1500 ft.

Melica pumila Nutt

Virgin City, Nevada - Bloomer 2262 - San Francisco
Bolander 2281. In Bloomer's specimens have nuts as large
as a hazel nut.

Melica heterodonta S. Wats.

Dry rocks at Carson Pass at about 7000 - 8000 ft. Nut
seen much higher. July 21st Prof. Brewster 1921.

Glyceria paniculata Retz

Swamps, San Francisco - Bolander 2273.

Small spike like the same from Ryebergs.

Glyceria nervosa Sw.

Scandianaria - Canion 7000 - Aug 6 - Brewster 2061 - Baynes, California by Dr. Hillebrand, 2252, 2256. The last noted locality furnishes specimens with rather large spikelets.

Festuca paspiformis Nutt.
microstachys

Oakland Hills Bolander 2276 - 2291 - 2292

Festuca ovina

San Francisco - Bolander 2296

Festuca paniculata Kunze - *Ancistroides* Host. Th. Br. - *F. paniculata*
& *F. remota* in Stand - Oakland Hills Bolander 2293. Specimens are

give like the original ones collected by Douglas. Bolander 1507
of the form collection is a very large plant form of the
same.

Festuca sp. n.

S. R. Peebles -

sp. with hairy awns - Bolan Virgin City Nebada City Nevada - Bloomer
2259 -

Festuca - too old to determine
dry hills above Silver Valley - 8000 ft. July 31st - Prof. Brewster 1926.

Bromus ciliatus L.

Big Trees California Dr. Hillman 2258

Bromus ciliatus
Bromus ~~resinaceus~~ ^{ciliatus} - ~~ciliatus~~ Hook & Arn
sun beach, San Diego. Dr Cooper 2235 -
seems to be shorter plant if that is a species.

Bromus ^{resinaceus?} *ciliatus* Hook & Arn.

a solitary broken dried specimen of what is probably this species.
San Diego - Dr Cooper 2236 - characteristic spec -

(Bromus 154 is of lost collection a form of *B. ciliatus* ?)

Bromus ciliatus ?

a var. with a short dense panicle such as - from the
Ryebergs - stem hairy. trail. seas. 9000 ft. Brewster 2088 - Aug 7.

Calymus perenne

Swamps, San Francisco - Bolander 2288. very large plant
specimens -

Hediondium nudum

San Diego. Cooper 2239

Hediondium nudum Nutt.

Gravel Hills San Diego. Dr Cooper 2234 -

Fritillaria recurva B. Griseb. Ledeb -

near summit of Carson Pass 8000 ft. Aug 16 -
Brewster 2118.

Triticum violaceum Horner - Indus. Gram. Scand - Linn.
T. repens var. purpureus Beck -
dry places 8000, 9000 ft - Aug 7. Seen int trail
Brewer 2068 - Agrees with Horner's sp. but no signs of a
creeping rootstock & cannot be repens -

Triticum caninum L.
caninum L.
Big Trees Dr Hillebrand 2257

Sitanion Elymoids

Dry hill sides, Carson Pass 9000 ft - alt - Brewer 1958 - seen ~~seen~~ int
Brazil 8000-9000 alt - Brewer 2072 - provided int - Cooper - 2224.

Elymus condensatus - Beck -
6000-7000 ft. high - Mono Lake - dry soil. 6000-7000 - Brewer 1872
Mohave River - West grass stone - Dr Cooper 2219 = some species with
roughened panicle) a slender form with a reduced spike - Fort
Point S. Frisco - Bolander 2275 -

Elymus sibiricus -
Marin Co. very large Bolander 2284 - San Francisco Bolander
2285 -

Dr. George Thunberg's list of his
determinations of the grasses of the
California State Survey.

List

1625-241.

1625 *Atropis californica* Munro.
46 *Panicum dichotomum*
1765 *Phleum alpinum* L.
1842 *Elymus condensatus* Beck.
46 *Brizopyrum Speciatum* Woronow
1921 *Melicu*
22 *Atropis Calif.*
47 *Festuca hirsutissima* var. *wolffii*.
65 *Phleum alpinum* L.
76 *Festuca?* too old.
98 *Hitania Elymoides* Raf.
99 *Atropis Calif.*
2002 *Festuca hirsutissima* Beauvois
2003 } *Atropis Calif.*
2004 }
These three numbers are not on Raf.
Brewer's list.
2044 *Festuca hirsutissima* Beauvois.
61 *Glyceria nervata* Trin.
68 *Triticum violaceum* Hornem.
72 *Hitania Elymoides* Raf.
73 *Phleum alpinum* Trin.

2077 *Atropis California?*
 78 "
 88 *Bromus ciliatus* var.
 2118 *Triticum caninum* B. Gmelini Ledeb.
 28 *Calamagrostis Breweri* n.sp.
 69 *Panicum dictyonium* var.
 2217 *Aristida californica* Thurb. n.sp.
 18 *Ficinia pulchella* Forr.
 19 *Elymus condensatus* Presl
 2220 *Polygonum monspeliacum*
 21 *Brizopogon spicatum* var. *strictum*
 22 *Phragmites communis* Trin
 23 *Eriocoma cuspidata* Nutt
 24 *Ottelia Elynoidea* Raf -
 . 25
 26 *Bouteloua oligostachys* Forr.
 27 *Panicum Aris-galli* L.
 28 *Panicum capillare* var.
 29 *Festuca microstachys* Nutt
 2230 *Pleuraphis rigida*. n.sp.
 1 *Sporobolus airoides* Forr.
 2 *Atropis Calif.*
 3 *Stipa setigera* Presl
 4 *Hordeum pusillum* Nutt

2235- *Bromus breviris tenuis*
 36 — *virens*
 37 *Rottboellia scandicaria* - leaves only -
 38 *Poa annua* L.
 39 *Hordeum murinum*
 2240 *Atropis California?*
 41 *Bouteloua polystachya* Forr.
 42 *Phleum alpinum*
 43 — *pratense*
 44 *Calamagrostis Canadensis*
 45 — *slender* —
 46 *Aira caespitosa* var -
 47 *Agyrtis* ^{varius?} ~~Scalena~~ Trin
 48 *Agyrtis decolor* Scandt Trin
 49 — *Scalena*
 2250 — *Scalena*
 51 *Agyrtis Hillebrandii* ^{if new} sp. nov -
 52 *Glyceria nemata* Trin.
 53
 54
 55 *Stipa viridula* Trin
 56 *Glyceria nemata* Trin
 57 *Triticum caninum* L.
 58 *Bromus ciliatus* L.
 59 *Festuca* ^{n.sp.}

2260 *Alopecurus geniculatus* var. *aristatus*
 61 *Stipa occidentalis* Thurb.
 62 *Melica pumila* Nutt
 63
 64 *Sporobolus asperifolius* Desv & Mey.
 65 *Panicum capillare*
 66 *Atropis Californicus*
 67 " "
 68 *Agrostis asperifolia*
 69 *Atropis*.
 2270 *Holcus lanatus* L.
 70 *Agrostis alba* & Malyanis
 72 — *asperifolia*
 73 *Glyceria paniciflora* Presl
 74 *Culum agrostis* Aleutica
 75 *Clypeus condensatus*
 76 *Festuca microstachys*
 77 *Poa trivialis*.
 78 *Agrostis caput*
 79 *Hierochloe macrophylla* Thurb.
 22 80 *Stipa tenuissima*
 81 *Melica pumila*
 82 *Agrostis caput*
 83 " "

} 2284 *Elymus libanicus*
 85 *Agrostis asperifolia*
 86 *Agrostis asperifolia*
 87 *Phalaris intermedia*
 88 *Lolium perenne*
 89 *Beckmannia eruciformis*
 2290 *Phleum pratense*
 91 *Festuca microstachys*
 92 *Atropis Californicus*
 93 *Festuca paniciflora* Thurb
 94 *Agrostis Vrticillata*
 95 — *asperifolia*
 96 *Festuca ovina*
 2417 *Ruppia distichum*
 18 *Scirpus oxycedrus*
 19 *Panicum crus-galli*
 20 — *capillare*
 21 *Phragmites communis*
 2493 *Agrostis caput*.